



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/605,016

09/01/2003

Jin-Sheng Gong

REAP0021USA

2015

27765

7590

12/14/2005

EXAMINER

SHAPIRO, LEONID

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION

P.O. BOX 506

MERRIFIELD, VA 22116

ART UNIT

PAPER NUMBER

2677

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/605,016		GONG ET AL.	
	Examiner		Art Unit	
	Leonid Shapiro		2677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Limitation of claim 1: "the **first resolution** is approximately satisfied by ..." is not described in the specification. Claim 14 recited: "the destination clock frequency has a first resolution". In specification paragraph 0027 description given for **adjustment resolution**. In paragraph 0028 attempt made to calculate adjustment resolution. Resulted value 2 to the power of -11 is too small to be practical.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5, 13 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear how clock change connected to generation of the output vertical sync signal (See Clock in Fig. 3) can satisfy limitation of all independent claims: "the first

frame rate and the second frame rate are the same", wherein the first frame rate will not have the same adjustment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-14, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loveridge et al. (US Patent 6,545,688 B1) in view of Miazaki et al. (US Patent 6,285,402 B1).

As to claim 1, Loveridge et al. teaches an apparatus for converting a source frame signal (101, Fig. 1A) to a destination frame signal (148, Fig. 1A), wherein the source frame signal is received at a first frame rate (e.g. the source frame rate is F) and the destination frame signal is output at a second frame rate (e.g. F, See Col. 6, Lines 25-64), comprising:

a converter for converting the source frame signal to the destination frame signal having a destination clock signal at a destination clock frequency (See Fig. 1A, items 101, 148, FLN, FL'N', Col. 6, Lines 25-64) ; and

a scaler and control circuit (360, 370, Fig. 3) for adjusting that the first frame rate and the second frame rate are substantially the same (See Fig. 2, item 260, 270, Col. 6, Lines 65-67).

Loveridge et al. does not disclose a frequency synthesizer for generating the destination clock frequency and dynamically adjusting the destination clock frequency.

Miyazaki et al. teaches a frequency synthesizer for generating the destination clock frequency and dynamically adjusting the destination clock frequency (See Fig. 4, items 11, 15, from Col. 5, Line 62 to Col. 6, Line 15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Miyazaki et al. into Loveridge et al. system in order to control of effective image period (See Col. 4, Lines 26-39 in the Miyazaki et al. reference).

As to claim 9, Loveridge et al. teaches a method frame synchronization for converting a source frame signal (101, Fig. 1A) to a destination frame signal (148, Fig. 1A), wherein the source frame signal is received at a first frame rate (e.g. the source frame rate is F) and the destination frame signal is output at a second frame rate (e.g. F , See Col. 6, Lines 25-64), comprising:

generating the destination frame signal according to the source frame signal, wherein the destination frame signal includes a destination clock signal at a destination clock frequency (See Fig. 1A, items 101, 148, FLN, FL'N', Col. 6, Lines 25-64) ; and

adjusting the destination clock frequency such that the first frame rate and the second frame rate are substantially the same (See Fig. 2, item 260, 270, Col. 6, Lines 65-67).

Loveridge et al. does not disclose dynamically adjusting the destination clock frequency.

Miyazaki et al. teaches dynamically adjusting the destination clock frequency (See Fig. 4, items 11, 15, from Col. 5, Line 62 to Col. 6, Line 15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Miyazaki et al. into Loveridge et al. system in order to control of effective image period (See Col. 4, Lines 26-39 in the Miyazaki et al. reference).

As to claim 16, Loveridge et al. teaches a method frame synchronization for converting a source frame signal (101, Fig. 1A) to a destination frame signal (148, Fig. 1A), wherein the source frame signal is received at a first frame rate (e.g. the source frame rate is F) and the destination frame signal is output at a second frame rate (e.g. F , See Col. 6, Lines 25-64), comprising:

generating the destination frame signal according to the source frame signal, wherein the destination frame signal includes a destination clock signal at a destination clock frequency (See Fig. 1A, items 101, 148, FLN, FL'N', Col. 6, Lines 25-64) ; and

adjusting period of destination frame such that the first frame rate and the second frame rate are substantially the same (See Fig. 2, item 260, 270, Col. 6, Lines 65-67).

Loveridge et al. does not disclose dynamically adjusting the destination clock frequency.

Miyazaki et al. teaches dynamically adjusting the destination clock frequency (See Fig. 4, items 11, 15, from Col. 5, Line 62 to Col. 6, Line 15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Miyazaki et al. into Loveridge et al. system in order to control of effective image period (See Col. 4, Lines 26-39 in the Miyazaki et al. reference).

As to claims 2, 10, Loveridge et al. teaches the source frame signal is at a first resolution and the destination frame signal is at a second resolution (see fig. 2, items 260, 270).

As to claims 3-4, 11-12, Miyazaki et al. teaches a buffer for storing at least a part of the source frame signal (See Fig. 4, item 10); wherein the frequency synthesizer adjusts the destination clock frequency by decreasing the destination clock frequency to prevent underflow in the buffer (equivalent to underflow of the screen in the reference) or by increasing the destination clock frequency to prevent overflow in the buffer (equivalent to overflow of the screen in the reference) (See Fig. 5A-5B, items 800+, 800-, Col. 7, Lines 1-19).

As to claims 5, 13, 17 as best understood by examiner, Miyazaki et al. teaches the destination display signal includes a last horizontal line defined by a last horizontal sync signal and a vertical sync signal, wherein the last horizontal sync signal is the last of a plurality of horizontal sync signals, and the frequency synthesizer synchronously generates the output vertical sync signal with the horizontal sync signal during the last horizontal line (See Col. 6, Lines 53-67).

As to claim 6, Miyazaki et al. teaches the converter receives the source frame signal at a source clock signal, and the destination clock signal is independent on the

source clock signal (See Fig. 4, items 1, 11).

As to claim 7, Miyazaki et al. teaches a phase-locked loop (See Fig. 4, items 1, 11).

As to claim 8, Loveridge et al. teaches the converter is a scaler (See Fig. 3, item 370).

As to claim 14, Loveridge et al. teaches the destination clock frequency has a first resolution such that the first frame rate and the second frame rate are substantially the same. (See Fig. 2, item 270).

Telephone Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2677

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LS
12.15.05

AMR A. AWAD
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", written over the printed name and title.